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| APPLICATION NO.                                               | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO. |
|---------------------------------------------------------------|-------------|----------------------|--------------------------------|------------------|
| 10/040,401                                                    | 01/09/2002  | R. William Mengel    | CO4/02                         | 2065             |
| 7590 02/24/2004                                               |             |                      |                                |                  |
| Roland H. Shubert<br>Post Office Box 2339<br>Reston, VA 20195 |             |                      | EXAMINER<br>DOROSHENK, ALEXA A |                  |
|                                                               |             |                      | ART UNIT<br>1764               | PAPER NUMBER     |
| DATE MAILED: 02/24/2004                                       |             |                      |                                |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/040,401

Applicant(s)

MENGEL ET AL.

Examiner

Alexa A. Doroshenk

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-27 is/are pending in the application.
- 4a) Of the above claim(s) 18-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 18-27 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims 18-27 drawn to an invention nonelected with traverse in Paper No. 4. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (5,506,274) in view of Arnold (6,135,370).

With respect to claim 1, Brown discloses a method for preparing carbon products from discarded rubber comprising the steps of:

pyrolyzing the rubber (col. 2, lines 47-67) in a closed retort in the temperature range of 450° to 650° C (col. 2, lines 62-64) to obtain volatiles and residual char, subjecting said char to pulverization (col. 3, lines 4-9 and 24-30) to produce an ultra-fine powder from 3-15 microns (col. 3, lines 24-30).

Brown does not disclose wherein the pulverizer is a resonance disintegration pulverizer.

Arnold discloses a pulverizer which can pulverize discarded rubber (col. 4, lines 42-45) which reads on "resonance disintegration" device as defined by applicant's specification (p. 5, lines 12-15). Arnold's pulverizer/resonance disintegrator can pulverize particles to micron sized particles (col. 15, line 59, col. 16 and lines 36-37) as

Art Unit: 1764

well as be adjusted as needed (Arnold: col. 13, line 66- col. 14, line 4) in order to achieve the desired size. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the pulverizer of Arnold for the pulverizing step of Brown since it is merely the selection of pulverizers known to be effective in the art of rubber pulverization which can achieve the size requirements of Brown (3-15 microns).

Since the combination of references teach wherein the particles are sized in the 10 micron range or less, when dispersed in water they would continue to be 10 microns or less.

With respect to claim 2, Arnold discloses wherein resonance disintegration is conducted in an air medium (col. 3, line 65- col. 4, line 16). Arnold also discloses wherein providing heat is optional (col. 3, lines 60-62) and discloses embodiments wherein no heat is added (fig. 5) and therefore demonstrates wherein the resonance disintegration is conducted at ambient temperature.

With respect to claim 3, Brown discloses wherein the discarded rubber comprises debaded and shredded scrap vehicle tires (col. 2, lines 22-34).

4. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (5,506,274) in view of Arnold (6,135,370) as applied to claim 1 above, and further in view of Hirota et al. (5,760,112).

Brown, in view of Arnold, discloses a method of producing carbon powder but does not disclose methods of further processing the carbon black powder.

Art Unit: 1764

Hirota et al. teaches a method of modifying the surface of carbon black by contacting the surface of the powder with a dispersant which is a polynuclear aromatic hydrocarbon (col. 2, lines 45-60). This contacting would have to take place after the resonance disintegration because that is when the powder is produced. By nature, a dispersant will bind to carbon black particles through Van der Waals forces. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further process the carbon powder of Brown in view of Arnold by the method of Hirota et al. since it is merely making use of the product of one process as the starting material in another known process. Additionally, Hirota et al. teaches that modifying the carbon powder as discussed, results in a modified carbon black which is able to generate a black coating of uniform appearance, has good storage stability and forms a strongly adherent and highly corrosion-resistant coating (col. 2, lines 18-23).

5. Claims 5, 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (5,506,274) in view of Arnold (6,135,370) as applied to claim 1 above, and further in view of Wilder (4,631,304).

Brown, in view of Arnold, discloses a method of producing carbon powder but does not disclose methods of further processing the carbon black powder.

Wilder teaches a method of modifying carbon blacks by treating the surface of the powder (claim 5), which would have to happen after the resonance disintegration wherein the powder is produced (claim 6), and teaches a method of processing carbon black by chemically reacting the carbon powder with functional groups and wherein the reactant is selected from the group consisting of peroxides, chlorosilanes, and acid

Art Unit: 1764

chlorides (claims 9 and 10) (col. 1, lines 42-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further process the carbon powder of Brown in view of Arnold by the method of Wilder since it is merely making use of the product of one process as the starting material in another known process.

Additionally, Wilder teaches that modifying the carbon powder as discussed, results in a modified carbon black which has reduced "scorchiness" and slower rate of curing of the rubber into which they have been compounded (col. 1, lines 24-30).

6. Claims 5, 6 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (5,506,274) in view of Arnold (6,135,370) as applied to claim 1 above, and further in view of Mahmud et al. (5,977,213).

Brown, in view of Arnold, discloses a method of producing carbon powder but does not disclose methods of further processing the carbon black powder.

Mahmud et al. teaches a method of modifying carbon blacks by treating the surface of the powder (claim 5), which would have to happen after the resonance disintegration wherein the powder is produced (claim 6), and wherein the reactant compound is an organo-metallic coupling agent (claim 11) selected from the group consisting of liquid, multi-functional titanates, zirconates, and aluminates (claim 12) (col. 6, lines 30-45) and wherein the coupling agent is sprayed onto the carbon particles (col. 6, line 66 - col. 7, line 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further process the carbon powder of Brown in view of Arnold by the method of Mahmud et al. since it is merely making use of the product of one process as the starting material in another known process. Additionally, Mahmud

Art Unit: 1764

et al. teaches that modifying the carbon powder as discussed, results in a modified carbon black which will exhibit improved dispersion, lower viscosity, higher thermal and/or electrical resistivity, improved abrasion resistance, and/or improved hysteresis (col. 3, lines 38-44).

With respect to claim 13, Mahmud et al. further discloses wherein the coupling agent is in the range of 0.1% to 1.0% by weight of carbon particles (col. 4, lines 26-33) and wherein the particles are further dispersed in a liquid vehicle (col. 12, lines 17-24).

With respect to claim 14, Mahmud et al. further discloses wherein the liquid vehicle is selected from the group consisting of water, alcohol, toluene, and mineral spirits (col. 12, lines 17-24).

7. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (5,506,274) in view of Arnold (6,135,370) and Mahmud et al. (5,977,213) as applied to claim 14 above, and further in view of Drury, Jr. et al. (3,950,290).

Drury, Jr. et al. teaches making a suspension of carbon black and coupling agents (titanates) (col. 12, lines 13-51) in a liquid vehicle of water wherein solids comprise 10% to 35% solids (col. 23, line 66- col. 24, line 30) (the examples of solids percent in the suspension exemplify the claimed range) to form an ink (col. 24, lines 22-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the suspension of carbon black and reactant as taught above, with respect to claim 14, in a combination with a liquid vehicle and in the solids percents taught by Drury, Jr. et al. in order to form an ink product and as it is merely making use of the product of one process as the starting material in another known process.

***Response to Arguments***

8. Applicant's arguments filed November 17, 2003 have been fully considered but they are not persuasive.

Applicant argues that the claims imply that a cycle time of about 3 hours is required and that the product of Brown cannot survive the conditions required by applicant's claim 1.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., operating the device so as to have a cycle time of about 3 hours) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that the product obtained by Brown is not the same as the char defined by applicant in claim 1 in that Brown's product contains rubber and applicant's does not.

Again, in response to applicant's argument that the references fail to show certain features/definitions of applicant's invention, it is noted that the features upon which applicant relies (i.e., char which does not contain rubber) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 1764

Applicant argues the inoperability of the reference of Brown. Applicant states that the sieve comparison table of Exhibit A to prove that sieves of the fineness required in Brown do not exist.

The following remarks with regard to such assertions are in line with MPEP 716.07.

Since every patent is presumed valid (35 U.S.C. 282), and since that presumption includes the presumption of operability (*Metropolitan Eng. Co. v. Coe*, 78 F.2d 199, 25 USPQ 216 (D.C.Cir. 1935), affidavits or declarations attacking the operability of a patent cited as a reference must rebut the presumption of operability by a preponderance of the evidence. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980).

The examiner does not find that a sieve comparison table for the processing of starch to be the ultimate catalog of sieves and therefor not found to be a preponderance of evidence for the non-existence of a sieve of the size required by Brown.

Applicant argues the inoperability in features of the reference which are not relied upon (the sieve/screen) therefor the reference is still effective as to other features which are operative. *In re Shepherd*, 172 F.2d 560, 80 USPQ 495 (CCPA 1949). The examiner has relied upon Brown's statement that the particles are 1-60 microns in diameter (col. 3, lines 4-9) as well as the 3-15 micron screen fineness to demonstrate the size of the particles generated (not the screen itself).

Where the affidavit or declaration presented asserts that the reference relied upon is inoperative, the claims represented by applicant must distinguish from the

Art Unit: 1764

alleged inoperative reference disclosure. In re Crosby, 157 F.2d 198, 71 USPQ 73 (CCPA 1946). See also In re Epstein, 32 F.3d 1559, 31 USPQ2d 1817 (Fed. Cir. 1994).

It is noted that Applicant has presented arguments against the Brown reference only, and individually, and has not shown nonobviousness based on combinations of references.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

Art Unit: 1764

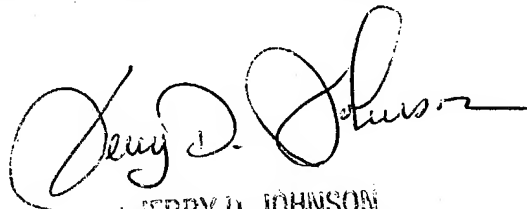
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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February 11, 2004

  
JERRY D. JOHNSON  
PRIMARY EXAMINER  
GROUP 1100